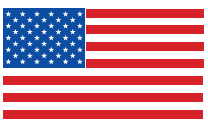
SYNOPSIS OF SAVINGS

Bently Nevada Systems Don't Cost ... They Pay

Argentina

Recent installation of a Bently Nevada 3500 Series electronic overspeed detection system on a hydrogen compressor train at a large refinery in Argentina highlighted the ongoing savings the system provides. Historically, the machine has used a mechanical bolt for overspeed protection, requiring about a day for testing and calibration each time the plant is shut down. With downtime costs of nearly $80,000 USD per day, and as high as $800,000 USD per day when no surplus exists in the plant, each test of the overspeed bolt costs a minimum of $80,000 USD. During installation of the 3500 system, both the 3500 and mechanical bolt were tested by physically running the machine into an overspeed condition. While the 3500 system worked flawlessly and repeatably, the older mechanical bolt they had been relying on failed to operate at all. The 3500 system's performance, and its ability to be tested electronically without physically putting the machine into an overspeed situation, means the system can be tested safely whenever desired, with no downtime, resulting in savings of at least $80,000 USD each time it is tested. *In other words, the system pays for itself after just one test!* The customer has elected to disable the mechanical system altogether, and now relies exclusively on their Bently Nevada 3500 Series system for overspeed protection purposes.



United States of America

A major oil company in the U.S.A. recently justified the purchase of a Data Manager® 2000 system by noting that, without appropriate data available, a machine problem resulting in a forced shutdown often requires a restart of the machine just to diagnose the problem. However, restarting the machine could mean incurring additional damage and delaying maintenance activities to repair it while the root cause is investigated, adding to the expense. The refinery cited two such incidents in the last 12 months where better data on critical machine trains would have saved in excess of $5 million. In one case, the plant could have eliminated the need for an unscheduled overhaul on one train. In another case, a problem could have been diagnosed earlier and the need to bring in expensive auxiliary equipment to keep the process stream online could have been minimized. Notable in the plant's justification is their recognition that a system is required in which *both machinery condition and relevant process data* can be correlated. This is a key feature of Data Manager 2000.

Suriname

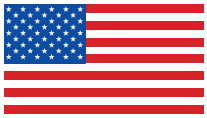
A large gas turbine is used to produce power at an industrial plant in Suriname. The machine was previously fitted with minimal vibration instrumentation consisting of seismic transducers on only part of the machine and no axial position measurements for thrust bearing monitoring. Excessive axial movement occurring in the machine went undetected and resulted in a catastrophic failure affecting the shaft, rotor and stator blades, thrust bearing and collar, and a radial bearing. The cost of the turbine's repair has now exceeded $3 million USD.

Thrust position is a measurement made very easily and reliably using proximity probes and a dual voting thrust position monitor. It is highly likely that the catastrophic failure could have been averted entirely had the machine been properly instrumented, resulting in a savings of $3 million USD in repair costs alone. As a result of the incident, the plant is not only properly instrumenting this machine, they are also reviewing their other machine trains to ensure that they are properly protected.

Mexico

Oil extraction pumps on several offshore platforms in Mexico's Cantarell area deliver more than 50% of the country's oil production. A recent upgrade of the gas turbines driving these pumps allowed them to operate at full pumping capacity for the first time, resulting in additional production valued at $240,000 USD per day. The ROI on the turbine upgrade was remarkably fast: approximately two days! As a result of the enormously

valuable production time of these machines (valued at $1.5 million USD per day per machine), the user is re-evaluating how they perform maintenance on these machines and is switching from a time-based approach to a condition-based approach. They also want to employ a method that allows remote monitoring, without the need to move personnel out to the offshore platforms simply to diagnose problems and monitor mechanical and thermodynamic conditions. Consequently, they are in the process of installing Bently Nevada's Machine Condition Manager™ 2000 (MCM2000) software for nine of these turbine/pump trains on two offshore platforms. This will help them to more closely monitor the condition of the machines while balancing the demands for maximum output without exceeding asset stress limits. In addition to the purchase of a Machine Condition Manager 2000 system, the customer is also instituting deep changes in the company's operations/maintenance philosophy, allowing them to use the online system to maximum benefit. The purchase of the system was justified based on the knowledge that MCM2000 will have an immediate payback if it can save them even a single day of lost production from one machine.



United States of America

A large refinery in the U.S.A. recently justified the purchase of a Bently Nevada Data Manager® 2000 system by noting that they would have been able to collect shutdown data automatically during a high-vibration trip of a hydrogen compressor unit, and make an immediate decision to restart the unit if no damage was detected. Without this data, the unit had to be sent to a local repair shop for disassembly and inspection, only to see that no damage had occurred. This resulted in ten days of lost production, the cost of which would have paid for the Data Manager® 2000 system many times over.